



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,690	06/10/2005	Seigo Yamada	Toyo-6 / FP20031003PCTUS	6775
54884 7590 06/26/2007 GOMEZ INTERNATIONAL PATENT OFFICE, LLC 1501 N. RODNEY STREET SUITE 101 WILMINGTON, DE 19806			EXAMINER MCCLENDON, SANZA L	
			ART UNIT 1711	PAPER NUMBER
			MAIL DATE 06/26/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/538,690

Applicant(s)

YAMADA ET AL.

Examiner

Sanza L. McClendon

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/10/05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6/05; 9/05; 2/07.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 1711

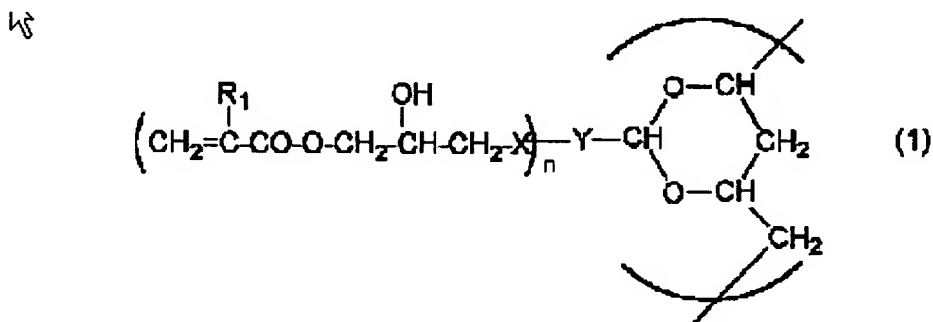
**DETAILED ACTION*****Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Utsunomiya et al (JP 2000-181062) in view of Kinugasa et al (JP2001-058972). Hereinafter referred to as JP'069 and JP'972, respectfully.

JP'062 sets forth photosensitive saponified polyvinyl acetates. Said saponified PVA is modified with radiation curable groups, such as (meth) acrylic groups. The modified PVA has the following formula:

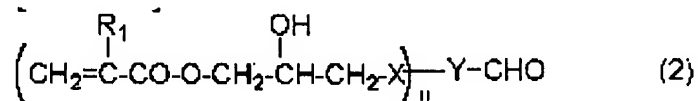


wherein R1 is methyl or H, n is an integer of 1-2, Y is a single bond or an aromatic group and X can be one of the following residues:

Art Unit: 1711

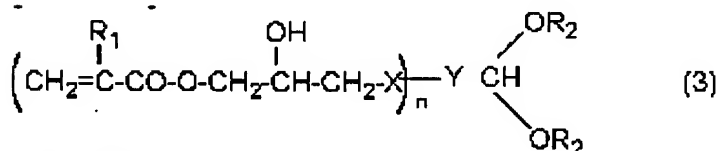
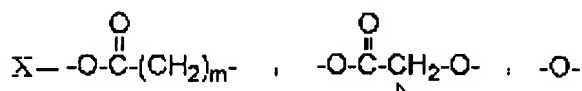


This appears to anticipate the instantly claimed formula (1). This compound is obtained by reacting saponified polyvinyl acetate with a compound having the general formula (2) or general formula (3):



R — Me, II

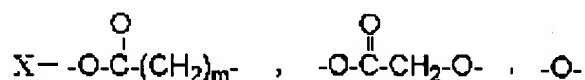
n — 1, 2



R — Me, II

R<sub>2</sub> — アルキル基

n — 1, 2



, wherein m is 0 to 6 and Y is the same as found in general formula 1 above. These compounds (2) and (3) are obtained by reacting a glycidyl (meth) acrylate with a hydroxy-containing aldehyde or a carboxylic acid-containing aldehyde compound—see [0019]. Yano et al teaches the compounds of general formula 1 can be used in photosensitive compositions comprising photoinitiators and a photosensitive if necessary—see [0027]. Per examples, it appears the JP'062 dilutes the saponified polyvinyl acetate in water and reacts a compound having the formula of (3) or (2) in the presence of an acid catalyst, adding the reaction product to an ion-exchange resin with a neutral pH. To this mixture a photoinitiators was added to obtain a photosensitive composition curable by exposure to radiation.

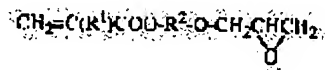
Jp'069 differs from the instant invention in that JP'069 fails to teach a compound that would result in the R<sub>2</sub> moiety as found in the instant formula 1, i.e., the reaction of (meth) acrylic ester of a diol (applicant R<sub>2</sub> moiety) with a epoxy (glycidyl) compound.

Art Unit: 1711

However, compounds of this nature are known as disclosed by JP'972. JP'972 teaches the reaction of a hydroxyalkyl acrylate glycidyl ether with a compound having the formula  $X_n-R_3$ , wherein  $R_3$  is the residue of an active hydrogen containing compound and  $X$  is a carboxy, OH or the like. When  $X$  is a carboxy compound JP'972 teaches these are obtained from carboxylic acid compound, such as phthalic acid, terephthalic acid and the like as found in section [0017]. The examiner deems that it would have been obvious for an ordinarily skilled artisan to use compounds such as disclosed by JP'972 in the reaction process to make compound (2)/(3) as found in JP'069, specifically the reaction step between the glycidyl (meth) acrylate with a carboxylic acid compound having an aldehyde group or with a phenol containing aldehyde compound. Because the compound disclosed by JP'972 are analogs of the compounds used in the making of formula (2)/(3), the examiners deems that it would be obvious, if not a natural progression, to use derivatives of glycidyl acrylates as found in JP'972 in the making of formula (2)/(3) based on functionality in the absence of evidence to the contrary. The examiner deems cured photosensitive resins should inherently form a hydrogel as found in claims 9-10 because JP'069 teaches subjecting the resin to photopolymerization. Thereby meeting the limitations of the claims. Therefore the invention of claims 1-10 is deemed obvious in view of the combination of references.

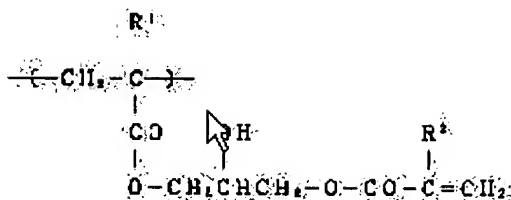
### Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. JP 11-327139 teaches photosensitive resin compositions by modifying acrylic resins with compounds having the general formula:

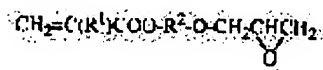


JP10-003167 teaches water-soluble photosensitive resin compositions by modifying PVA block copolymers with glycidyl (meth) acrylate so that the copolymer has a photoreactive grafted chain:

Art Unit: 1711



USPG Pub Application 2007/0109375 and EP 1 702 961 both to Yamauchi et al teaches ink-jet inks comprising a reaction product of a polyvinyl alcohol with an reaction product of a glycidyl acrylate and a hydroxy aldehyde. WO 2005/012448 teaches ink compositions comprising a polyvinyl alcohol having pendent acrylic groups. JP 2004-161942 sets forth photosensitive resin compositions comprising the reaction product of a water-soluble acrylic resin and a compound having the formula

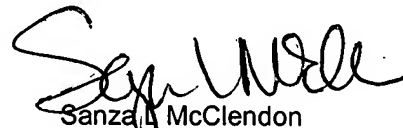


4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanza L. McClendon whose telephone number is (571) 272-1074. The examiner can normally be reached on Monday through Friday 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1711

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Sanza L. McClendon  
Examiner  
Art Unit 1711

SMc